

15¢

TECHNOLOGY

November 25, 1950

SCIENCE NEWS LETTER

PUBLIC LIBRARY
DEC 1 1950
DETROIT

THE WEEKLY SUMMARY OF CURRENT SCIENCE



Great White Throne

See Page 339

A SCIENCE SERVICE PUBLICATION

5.50 A YEAR

VOL. 58 NO. 22 PAGES 331-352

DETROIT PUBLIC LIBRARY
TECHNOLOGY DEPT.
PUTNAM AVE PT

NUTRITION

More Good from Food

A tenth to a third more nourishment obtained if one of the new antibiotics is taken with it. Suburban soil contains vitamin.

► A TENTH to a third more nourishment can be obtained from food if one of the new disease-fighting wonder drugs such as penicillin, aureomycin, streptomycin and terramycin antibiotics is taken along with it.

Experiments in animal feeding suggest that humans too can have their growth and health improved by these discoveries, Dr. C. G. King, scientific director of the Nutrition Foundation, reported in summarizing this year's food research.

Yet why these wonder drugs and recently discovered vitamins such as B₁₂ are effective is still a mystery.

Several groups believe that antibiotics can exert a stimulating effect on growth, beyond the effect of all known vitamins. Dr. King said there is widespread agreement that natural protein foods of animal origin such as liver, milk, meat and eggs contain essential nutrients beyond those now identified.

The number of new vitamins yet to be identified cannot be stated with any sense of finality, but from studies with chickens, turkeys, minks, cats, rats and pigs, research men are convinced that at least two and perhaps as many as four or five factors remain to be identified.

There is a great deal of interest in discovering the real function of the antibiotics when they stimulate growth. The scientists

ask: (1) are they suppressing microorganisms that normally retard the animals' growth as a result of their poisonous end-products? (2) or, are the antibiotics, by suppressing the growth of some organisms, encouraging the growth of others that provide greater quantities of unknown nutrients? (3) or, is the suppression of bacterial growth making available a greater supply of the known vitamins and amino acids that are contained initially in the food?

Whether any of these answers have practical significance lies in the future. Many scientists believe that they will have, Dr. King said, although it is too early to predict how useful the results will be.

When antibiotic supplements are fed to turkeys, chickens and pigs, several groups report gains in weight in the range of 10% to 30% above the expected performance on "good rations." Preliminary tests are also under way with children.

It was disturbing to "pure minded" chemists to discover that feeding two to five percent of just ordinary farm dirt to pigs on test diets caused improvements in growth and health. Again it was surprising when research men testing the vitamin B₁₂ content of good clean suburban New York soil found that after stirring water with the dirt and filtering, the water had a vitamin B₁₂ content comparable to milk.

Science News Letter, November 25, 1950

MEDICINE

Best Frostbite Treatment

Old treatment of rubbing frozen feet with snow increases chances of gangrene. Modern method is fast thawing with injections of heparin.

► IF the hundreds of soldiers and marines reported to have frozen feet during the latest advances in Korea followed the old treatment of rubbing snow or cold water on their feet, they may have increased their chances of getting gangrene.

But their chances of escaping this and consequent loss of toes, feet or legs should be good if they are gotten quickly enough to hospitals equipped to give them treatment with heparin.

This anti-blood clotting chemical and rapid thawing of frozen parts are the two latest methods reported for treatment of frostbite.

The fast thawing method is contrary to

medical views and practice as recent as World War II. Experiments showing that it gives best results in treatment of frostbite were reported only a year ago by Dr. Harris B. Shumacker of Indiana University Medical Center.

The ideal temperature for thawing, he and his associates found, is one slightly above body temperature. Too much heat is bad, they cautioned.

Their findings came from experiments in which the tails of mice were frozen. When the frozen tails were rapidly warmed, no gangrene set in, but it did when cold was applied.

The rapid thawing is effective in part at

least, Dr. Shumacker explained, because it shortens the period during which tissue are frozen and temporarily bloodless.

Recently the Association of Military Surgeons, meeting in New York, were reminded of other experiments showing the value of the anti-blood clot chemical, heparin, for treatment of frostbite.

One frostbite victim had been saved by heparin given when he reached the hospital after he had been lying in the street at least 14 hours in below freezing temperature with only low shoes and thin socks on his feet.

His feet and legs were ice cold up to the knee and remained so for five hours. Heparin was injected into his veins for five days. He developed considerable blistering, but was saved from any permanent loss of tissue or parts.

This and other cases were reported by Dr. Kurt Lange of New York when announcing their results with heparin treatment of frostbite in 1945.

Referring to this work at the meeting, Dr. Irving S. Wright of New York predicted that an anti-clotting drug which could be taken by mouth and be effective within an hour might be developed.

Use of the anti-blood clotting chemical prevents thrombosis or clot formation in blood vessels which ultimately leads to gangrene. The dangerous thrombosis does not occur early in frostbite, Dr. Lange and associates found, but anti-clot treatment must be started before this stage of thrombosis is reached.

Science News Letter, November 25, 1950

MEDICINE

"Dry Ice" Treatment Cures Most Acne

► A NEW treatment for acne involving the use of cakes of "dry ice," or carbon dioxide snow, was reported to the Southern Medical Association at its meeting in St. Louis.

Cures in from 70% to 86% of the patients, depending on the types of acne, were achieved, Dr. William L. Dobes of Atlanta, Ga., reported.

The cakes of dry ice are first dipped in a mixture of acetone and a liquid sulfur preparation marketed under the name of "Intraderm Sulfur." The cakes are then applied with moderate pressure to the skin of the acne sufferer.

The acetone dissolves the greasy film on the skin and allows the sulfur to be carried into the pores, Dr. Dobes explained. The sulfur has a drying effect on the oil glands of the skin and also has a bacteria-checking action, thus healing many infected pimples or sores.

The method is particularly useful, Dr. Dobes said, for young patients who should not be given X-ray treatments and for patients with whom X-ray and other treatments have failed.

Science News Letter, November 25, 1950

GEOLOGY

Oceans Still Growing

Atmosphere also may be constantly fed by hot volatile gases escaping from interior of earth. Ocean basins sinking, making room for more water.

► THE OCEANS and the atmosphere may still be growing, fed by volatile gases escaping from the earth's interior.

This is the startling new theory of one of the nation's top geologists, Dr. William W. Rubey of the U. S. Geological Survey. But don't look for a world-wide flood tomorrow. The process is extremely slow. It has been going on since the dawn of geologic history, Dr. Rubey suggests.

Dr. Rubey presented his new concept of the origin of the oceans in his address as retiring president of the Geological Society of America.

Minerals and fossils in ancient rocks show that the composition of sea water and atmosphere has varied only slightly since early geologic time, the scientist said.

Some materials in the earth's sediments, air and oceans are much too profuse to be explained simply by the weathering of rocks, he said. These include water, carbon, chlorine, nitrogen and sulfur. They are among the volatile elements which escape as molten rock from the earth's core rises and falls.

The relative amounts of these "excess" volatiles correspond closely enough to those in gases from volcanoes and hot springs, Dr. Rubey said, to suggest that the ocean and atmosphere may have come from such gases.

Older geologic theories make the earth originally a mass of molten or gaseous material. If this were true, Dr. Rubey said, the "excess volatiles" probably condensed from a primitive atmosphere.

But advancing knowledge in seismology and geochemistry, he said, "makes it increasingly difficult to retain the concept of an originally molten earth."

If the oceans and the air came from the interior of the earth, on the other hand, it would imply that their overall volume has grown steadily over the ages.

This is backed up by geologic evidence, Dr. Rubey said. The ocean basins have been progressively sinking, necessarily meaning a greater amount of water to fill them.

Science News Letter, November 25, 1950

GEOLOGY

Old Man River Is Real Dirt-Mover

► ENOUGH mud and ooze to build a dike five miles across and tall enough to reach the moon has been deposited in the Gulf of Mexico during the past 125,000,000 years, Dr. Grover E. Murray of Louisiana State University told the Geological Society of

America meeting in Washington.

This amount of sediment, amounting to 1,500,000 cubic miles with a weight of 15,620,000,000,000 tons was mostly removed from the surface of the central United States by rivers.

Science News Letter, November 25, 1950

On This Week's Cover

► AMONG the most striking of all scientific photography is that of the geologist. The grooves and indentations shown on this week's cover of SCIENCE NEWS LETTER are not a close-up of a fossil, but a picture taken high in the sky, looking straight down at Zion National Park's majestic canyon in southwestern Utah. Dead center is a U-turn in the gorge called "Angel's Landing." To its right is the cup-like depression known as the "Great White Throne." Taken from this height (14,000 to 18,000 feet) the precipitous walls of the gorge are lost, but in their place is a sweeping panorama of the giant folds and water-cut canyons which make Zion Park a classic of geology. The photograph is part of a University of Illinois collection shown at the annual convention of the Geological Society of America in Washington by Dr. Harold R. Wanless, Illinois professor of geology.

Science News Letter, November 25, 1950

AERONAUTICS

Liferaft for Plane Crew Inflates Automatically

► "CIRCUS-TENT," a 20-man liferaft for the crewmen of a ditched plane, is automatically inflated by means of a line attached to the compressed gas tank in the thrown-out raft and hooked to the plane.

It is called a floating circus tent because of its appearance when in the water, particularly with its protecting canopy in position. The raft itself has no top or bottom, so it makes no difference which side is uppermost when it hits the water.

The raft is made of two rubberized nylon floatation tubes which resemble giant automobile inner tubes. The floor of the raft is between these tubes. Both sides are alike, and whichever one happens to be on the top is used for the passengers.

This new liferaft was developed in Dayton at the Wright-Patterson Air Force Base and 400 have been ordered from the Air Cruisers Company, Clifton, N. J. They are for use on planes of the Military Air Transport Service. The liferaft comes complete with canopy, radar reflector and accessory kit, all wrapped in a compact package three feet long and half that in width.

Particular features of the raft include its sturdiness and buoyancy. It can support more than 5,000 pounds without sinking and has survived tests in winds up to 60 miles an hour.

Science News Letter, November 25, 1950



LIFE RAFT—This 20-man floating refuge for downed airmen is dry and highly buoyant. The canopy, raised here to give ventilation, can also be lowered to keep out rain or sun.

MEDICINE

Old People "Revitalized"

Men and women from 65 to 85 years of age given increased strength and alertness, more interest in life by suitable diet and hormone treatment.

► A METHOD of "revitalizing" old people, from 65 to 85 years, was reported by Dr. William B. Kountz and associates of Washington University School of Medicine at the meeting in St. Louis of the Gerontological Society.

The method is one of revitalizing rather than rejuvenating, Dr. Kountz emphasized, though he admitted that to some extent in some persons rejuvenation was also possible. Elderly women, for example, have a return of monthly menstrual bleeding under the revitalizing treatment. But their ovaries have not yet been revitalized though studies on this are now in progress.

Mental alertness and increased physical strength, so that the oldsters are more interested in life, more cooperative, able to get about and even in some cases return to earning a living, are the chief changes brought about so far by the revitalizing treatment. Certain organs, such as the uterus and genital organs, can be revitalized. The bodies of the old men and women become healthier and in general function more like those of younger persons.

The revitalizing method consists in giving a suitable diet and such hormones, or gland products, as are needed. On the diet side, protein foods, the meat, milk, eggs and fish group are emphasized. At the same time the oldsters are given the male hormone testosterone, to make sure their aging bodies can utilize the protein.

The sugar and starch burning mechanism is revitalized by giving certain adrenal gland hormones or by insulin if necessary.

Thyroid gland hormone or iodine is given, according to the old person's needs. Cortisone and female hormones are also used and in some cases certain hormones from the pituitary gland in the head are given.

Some 250 old men and women at the St. Louis City Infirmary have been getting the revitalizing treatment, but so far no attempts have been made to do a complete revitalizing job on any one person. Some have gotten one part of the treatment and some another, in the research to find best methods of revitalizing them.

The point of the research, Dr. Kountz said, is to show that revitalization can and does take place through proper application of scientific principles.

Science News Letter, November 25, 1950

VOLCANOLOGY

Paricutin Volcano Losing Vigor of Youth

► THE VOLCANO Paricutin, born in a Mexican field in February, 1943, is slowly losing the vigor of its youth.

Continual eruptions are still going on, but they were slightly less intense and less frequent by the end of 1949 than in former years, Carl Fries, Jr., chief of the U. S. Geological Survey's Mexican office, has reported. There were longer periods between blasts from the volcano's crater, and the amount of volcanic ash shot into the atmosphere is declining, Mr. Fries and a Mexican geologist, Celedonio Gutierrez,

wrote in the publication of the American Geophysical Union.

Paricutin, although a small volcano, has been studied in greater detail than any volcano in history. Constant observations have been made by scientists since the time the vent opened in the earth and the mountain began to grow.

Science News Letter, November 25, 1950

Coal constitutes about 95% of America's estimated reserves of fuel.

SCIENCE NEWS LETTER

VOL. 58 NOVEMBER 25, 1950 No. 22

44,900 copies of this issue printed

The Weekly Summary of Current Science, published every Saturday by SCIENCE SERVICE, Inc., 1719 N St., N. W., Washington 6, D. C., NOrth 2255. Edited by WATSON DAVIS.

Subscription rates: 1 yr., \$5.50; 2 yrs., \$10.00; 3 yrs., \$14.50; single copy, 15 cents, more than six months old, 25 cents. No charge for foreign postage.

Change of address: Three weeks notice is required. When ordering a change, please state exactly how magazine is now addressed. Your new address should include postal zone number if you have one.

Copyright, 1950, by Science Service, Inc. Reproduction of any portion of SCIENCE NEWS LETTER is strictly prohibited. Newspapers, magazines and other publications are invited to avail themselves of the numerous syndicate services issued by Science Service. Science Service also publishes CHEMISTRY (monthly) and THINGS of Science (monthly).

Printed in U. S. A. Entered as second class matter at the post office at Washington, D. C. under the act of March 3, 1879. Acceptance for mailing at the special rate of postage provided for by Sec. 34.40, P. L. and R., 1948 Edition, paragraph (d) (act of February 28, 1925; 39 U. S. Code 283), authorized February 28, 1950. Established in mimeographed form March 18, 1922. Title registered as trademark, U. S. and Canadian Patent Offices. Indexed in Readers' Guide to periodical literature, Abridged Guide, and the Engineering Index.

Member Audit Bureau of Circulation. Advertising Representatives: Howland and Howland, Inc., 393 7th Ave., N.Y.C., Pennsylvania 6-5566 and 360 N. Michigan Ave., Chicago. STATE 2-4822.

SCIENCE SERVICE

The Institution for the Popularization of Science organized 1921 as a non-profit corporation.

Board of Trustees—Nominated by the American Association for the Advancement of Science: Edwin G. Conklin, Princeton University; Karl Lark-Horowitz, Purdue University; Kirtley F. Mather, Harvard University. Nominated by the National Academy of Sciences: Harlow Shapley, Harvard College Observatory; R. A. Millikan, California Institute of Technology; L. A. Maynard, Cornell University. Nominated by the National Research Council: Ross G. Harrison, Yale University; Alexander Wetmore, Secretary, Smithsonian Institution; Rene J. Dubos, Rockefeller Institute for Medical Research. Nominated by the Journalistic Profession: A. H. Kirchoff, Buffalo Evening News; Neil H. Swanson, Baltimore Sun Papers; O. W. Riegel, Washington and Lee School of Journalism. Nominated by the E. W. Scripps Estate: H. L. Smithton, E. W. Scripps Trust; Frank R. Ford, Evansville Press; Charles E. Scripps, Scripps Howard Newspapers.

Officers—President: Harlow Shapley; Vice President and chairman of Executive Committee: Alexander Wetmore; Treasurer: O. W. Riegel; Secretary: Watson Davis.

Staff—Director: Watson Davis. Writers: Jane Stafford, A. C. Monahan, Marjorie Van de Water, Ann Ewing, Wadsworth Likely, Sam Matthews. Science Clubs of America: Joseph H. Kraus, Margaret E. Patterson. Photography: Fremont Davis. Sales and Advertising: Hallie Jenkins. Production: Priscilla Howe. In London: J. G. Feinberg.

Question Box

AGRICULTURE

Why are seeds dyed yellow before planting? p. 345.

ANTHROPOLOGY

What evidence points to man's great antiquity in America? p. 343.

GEOLOGY

What makes the oceans grow? p. 339.

Photographs: Cover, Dr. Harold R. Wanless, University of Illinois; p. 339, U. S. Air Force; p. 341, MIT; p. 343, Hamilton Wright.

MEDICINE

How can old people be "revitalized"? p. 340.

How is dry ice used on acne? p. 338.

Should you rub frozen feet with snow? p. 338.

NUTRITION

Why does farm dirt fed to hogs cause improvement in growth? p. 338.

RADIO-ASTRONOMY

How can study of the "northern lights" aid radio communication? p. 348.

PHYSICS

Largest "Deep Freeze"

New "cryostat," with capacity of 15 cubic feet, now in operation at Massachusetts Institute of Technology. Works by compressing, cooling and expanding helium.

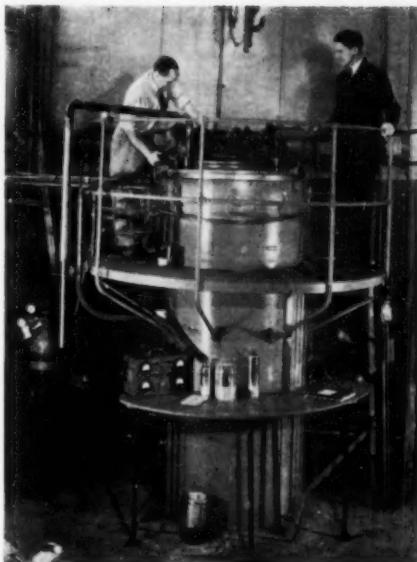
► NEW THEORIES relative to the peculiar behavior of metals at temperatures near absolute zero are expected with the use of the largest "super-deep-freeze" yet constructed. It is now in operation at the Massachusetts Institute of Technology.

It is what scientists call a "cryostat," and was designed and built by Dr. Samuel C. Collins, of the MIT staff. He also developed smaller types of low-temperature apparatus now used by several institutions for studying the behavior of materials at temperatures some 450 degrees below zero on the Fahrenheit scale. Absolute zero is approximately 460 degrees below zero, but this temperature has as yet never been reached.

This new equipment has a capacity of 15 cubic feet and can cool its contents to 452 degrees below zero Fahrenheit. It can hold them at that temperature indefinitely. It is based largely on the principles employed by Dr. Collins in his smaller cryostats. It operates by compressing, regeneratively cooling and then expanding helium gas until a portion of the gas turns into a liquid. This takes place when the helium is just 7.5 degrees above absolute zero.

The new machine, Dr. Collins states, fulfills for the first time the need for a large refrigerated space in which heavy equipment can be cooled and studied at lower temperatures than ever before.

Science News Letter, November 25, 1950



GIANT "DEEP FREEZE"—Drs. Samuel C. Collins and Robert P. Cavileer of MIT are shown here with the newly completed cryostat for very low temperature research.

MEDICINE

Link Virus to Cancer

Evidence reported that Hodgkin's disease is caused by filterable virus. Research continuing to learn more about the agent and how it may be attacked.

► SCIENTISTS are coming close to proving that some human cancers are caused by viruses.

For many years it has been possible to induce cancers in experimental animals with certain viruses; and it has long been suspected that some human tumors might also have a virus origin.

Now, Dr. Warren L. Bostick, pathologist in the University of California School of Medicine, San Francisco, has reported (*PROCEEDINGS OF THE SOCIETY FOR EXPERIMENTAL BIOLOGY*) the first strong evidence that Hodgkin's disease, a consistently fatal form of cancer, is caused by a virus.

Hodgkin's disease long has been suspected to be of virus origin, because it so closely resembles an infectious ailment. It is accompanied by recurring fevers and swelling of gland and lymph tissue. But until now efforts to pin the disease agent down have been inconclusive.

In several ways Dr. Bostick has demonstrated that Hodgkin's disease tissue contains a virus. Extracts of tissue killed a significant number of chicken egg embryos—the anticipated effect of a virus.

The extract also demonstrated the interference phenomena characteristic of viruses. In this case, influenza virus could not get a foothold in fertile chicken eggs

already injected with Hodgkin's disease extract.

Finally, the scientist showed that the agent in the extract is filterable. That is, the extract was passed through a filter which is designed to catch all infectious agents but those the size of viruses. Portions of the extract passed through the filters still retained their lethal qualities.

The scientist is continuing work directed at learning more about the agent, its action, and how it may be attacked.

Science News Letter, November 25, 1950

ENGINEERING

Control of Corrosion Necessary in Pipelines

► THE CONTROL of corrosion in petroleum pipelines, both on the inside and the outside, was a leading subject of discussion at the meeting of the American Petroleum Institute in Los Angeles. Unless protective measures are taken pipes carrying crude oil and petroleum products may have a short life.

Internal corrosion is a major problem in producing areas where crude oils with a high content of hydrogen sulfide are prevalent, the Institute was told by J. K. Alfred, Shell Pipe Line Corporation, Colorado City,

Texas. One "hot spot" for internal corrosion is the relatively new oil fields in the Permian Basin of West Texas. In this area plastic and cement linings are used to prevent corrosion.

A method of cleaning a pipeline already in use and coating the inside with various vinyl and polyester plastics was described. The method involves the use of two separated rubber plugs which are driven through the pipe by compressed air. They clean the pipe by friction or pressure and coat it by a wiping action.

For outside protection, new developments in coatings and electric cathodic methods were discussed by Carlton L. Goodwin, Portland Pipe Line Corp., Portland, Me. Coating alone has a limited effective life, he said. Cathodic protection with an electric current has been effective on bare pipe, but the cost over a long period of time may be excessive.

Effective coatings must retain good electrical resistance underground and have the lowest solubility in crude oil or crude-oil products. He indicated that hot-applied coal-tar enamels are best.

Direct current supply at low voltages is required for the application of cathodic protection. Various methods used to obtain the current were described. The present principal sources are galvanic anodes and rectifiers which convert power-line currents to direct current. The use of galvanic anodes has limited applications. Dry-type rectifiers have proved most successful and dependable.

Science News Letter, November 25, 1950

GENERAL SCIENCE

Squeezed Out of College

Colleges caught between reduction in aid to veterans and loss of draft deferment. Additional threat seen in proposed Universal Military Service plan.

► THE NATION'S colleges are being caught in a giant nutcracker which is squeezing thousands of students out of their new dormitories and classrooms. One arm of that nutcracker was revealed by figures from the U. S. Office of Education which shows a drop of 33% in the number of veterans attending college this year.

The figure has gone down from 856,000 veterans last year to 575,000 this year.

The other arm of the nutcracker will probably be brought to bear next June when this year's male freshman class members, numbering 319,000, face review of their draft deferment status.

Approximately 30%, or 95,000, will be exempted because of physical or other reasons. If a plan supported by Draft Director Lewis B. Hershey to take away deferment from the bottom half of the freshman class is adopted, the nation's colleges will lose upward of 100,000 men from next year's sophomore class.

The large majority of them will be 19—lower draft age limit—next year.

The gradual but sure disappearance of

G. I. Bill financial support as the veteran population uses up its rights contributed largely to this year's drop in total enrollment to 2,295,000 from 2,456,000 last year.

However this fall-off in the number of male students at the nation's colleges is a small threat to them compared to what will happen if Universal Military Service in its most drastic form is approved by the newly elected Congress.

Instead of approximately 300,000 male freshmen and 200,000 female freshmen expected next year, there would be only about 90,000 males—those who would be deferred from UMS for other reasons. This would occur if all physically qualified male 18-year-olds were required to enter military service for a period of one to two years as many officials are now suggesting.

All kinds of higher education institutions have smaller student bodies this year, except theological seminaries and Negro institutions. Negro colleges held their own in total student bodies and the entering freshman class was actually 31% larger than last year's.

Science News Letter, November 25, 1950

Forces. Also, the board would have the power to review requests from the Armed Forces to find out whether they were asking for the proper kind of people.

Science News Letter, November 25, 1950

GENERAL SCIENCE

NSRB Should Decide Deferment Policy

► THE National Security Resources Board, rather than the Defense Department or any other agency, should determine how many men should be deferred to go to college. Dr. Arthur S. Adams told Science Service

Dr. Adams is president-elect of the American Council of Education, president of the Association of Land-Grant Colleges and Universities and president of the University of New Hampshire.

"There must be maintained a trickle of young men into the colleges and universities whatever system of induction into the armed forces is set up," Dr. Adams maintained. "The NSRB is the logical agency to decide how large a trickle is necessary to provide trained men for the defense of the country."

Dr. Adams, in Washington for the 64th annual convention of the land-grant colleges organization, thus put himself in direct opposition to Harvard President James B. Conant's program of universal military service for everybody—including the physically handicapped—at age 18.

Dr. Adams believes that every young man should serve at some time. He refused to be specific as to how this would be accomplished, pointing out that there is much confusion both in Washington and among educators on the subject.

Dr. Conant's proposal for "universal" Universal Military Service, shortly to be announced in a national magazine, was the subject of much discussion at the convention. Most college presidents present tended to look upon it with considerable skepticism, primarily because it makes no provision for the continuous college training of young men of draft age.

Science News Letter, November 25, 1950

GENERAL SCIENCE

Military Service Urged For All 18-Year-Olds

► DR. James B. Conant, president of Harvard University, will shortly advocate two years of Universal Military Service for every young man when he reaches 18—whether or not he is physically handicapped, Science Service has learned.

He further will recommend that the nation's young manhood perform this service "at a low rate of pay." Physically handicapped young men, he will say, should be enrolled to perform those services for the nation which it is possible for them to perform.

GENERAL SCIENCE

Registry of Scientists

Four leading scientific bodies agree on recommendations for compulsory registration and drafting if necessary. Would defer college students.

► FOUR of the nation's top scientific bodies, at the request of the National Security Resources Board, have agreed on recommendations which would provide for the compulsory registration and drafting, if needed, of up to 600,000 male scientists, technicians and engineers, Science Service has learned.

The scientific societies, which were asked last September to draw up recommendations on how to handle scarce scientific manpower, are the American Institute of Physics, the American Chemical Society, the Engineers Joint Council and the National Research Council.

The four societies, in their joint statement, strongly advocate deferring some men from service to go to college. They support the principles of a plan advocated by Selective Service Director Lewis B. Hershey which would have all high school seniors taking a college aptitude test. Only the 15% or 20% who achieved high marks

on this test would receive deferments to go to college.

This puts the scientific groups in opposition to the principles of all-out Universal Military Service as advocated by President James B. Conant of Harvard and some officials of the Defense Department. However, the scientific groups recommend that those who do receive deferment for college training be among the first to be called into the Armed Forces when they have finished college, regardless of whether they have passed the draft age.

Under the plan, all male scientists, technicians and engineers would be required to register with a new agency—perhaps to be called the National Scientific Personnel Board. The board would have the power to fill the needs of the Armed Forces for scientific manpower from this registration list. Men would be called up on an individual basis to fill individual jobs in the Armed

have the
Armed
were ask-
25, 1950

Dr. Conant's statement—to appear as an article in a forthcoming issue of a national magazine—is expected to raise a storm of controversy in scientific, educational and government manpower circles. Copies have been circulated among some of these people already and discussion is widespread.

It is in direct conflict with a plan sponsored by Selective Service Director Lewis B. Hershey for deferment of some college students. This plan, which has received much support from scientists and educators, would establish a nationwide college aptitude test. Young men who received high marks on this test would be permitted to enter college. They could stay there so long as they remained in the upper portion of their class.

Another college president, Dr. Leonard Carmichael of Tufts, Medford, Mass., told

ANTHROPOLOGY

How Ancient Is American?

Tools found in gravel pit with 750,000-year-old fossils but scientists are divided in opinion as to whether human artifacts are equally old.

► DID man first reach America from Asia 750,000 years ago, instead of a mere 10,000 to 12,000 years ago?

Scientists disagree vehemently on the evidence of a sand and gravel pit near Frederick, Okla. There, amidst the remains of long-extinct animals, ancient flint and stone artifacts, tools of human habitation, have been found.

There is sharply divided opinion on whether the tools and animal fossils come from the same geologic age, Dr. Grayson E. Meade of Texas Technological College said in a paper before the Paleontological Society of America meeting in Washington.

Without entering the controversy, Dr. Meade described fossil animal remains found in the Holloman sand pit. During Aftonian time, close to the beginning of the Ice Age, the area was the home of elephants, wild camels, and lions found today only in Africa and Asia.

The age of these fossils has been definitely established as about 750,000 years.

The Texas geologist claimed no knowledge of the authenticity of the human evidence in the Holloman pit.

However, he said that those who believe the artifacts and animal fossils were buried in the same dim age consider the Holloman site "by far the oldest known evidence of man in North America."

It has been generally accepted by anthropologists that North and South America were peopled by migrants from Asia who arrived about 10,000 years ago, Dr. E. H. Sellards, director of the Texas Memorial Museum, said in another paper.

Science Service that he could not approve Universal Military Service at 18 for everybody. Dr. Carmichael was in charge of the National Scientific Roster during the war, and thus kept track of all scientific, technical and engineering personnel.

"If we have UMS," said Dr. Carmichael, "all individuals should serve at some one time in their lives. However, a certain segment of young men, chosen on the basis of a test and state quotas, should be given the option of going to college to receive training.

"If everybody is drafted at 18," he went on, "the men who go to college afterwards may be subject to a second draft and a second period of service. This is likely because the Armed Forces will need college-trained men such as doctors, scientists and engineers."

Science News Letter, November 25, 1950

neglected mineral, ranging from heat-resistant cooking dishes to the fittings used in ceramic firing kilns.

Lithium was discovered from petalite in 1818. There are deposits in Sweden but they are not extensively worked. In the late 1930's and early 1940's, huge blocks of petalite were found in quarries in South West Africa. There are no commercial deposits in the United States, and the mineral has to be shipped in from Africa.

Science News Letter, November 25, 1950

MINERALOGY

Big Sparkling Stones No Good for Necklace

► LARGE, sparkling stones—false gems that rival emeralds or sapphires in their color and luster, are now on exhibit at the U. S. National Museum.

The collection was gathered over many years from the copper-mining district of the former German southwest African region. Except for their softness, these crystals might well become supergems for decorative necklaces and pins.

The crystals, of lead or copper mixed with carbon or sulfur, are formed from such minerals as lead carbonate, carbonated copper and copper silicate. The minerals are formed by percolating waters and occur in cavities in the upper layers of copper deposits.

Science News Letter, November 25, 1950



ROYAL TOMB—Burial palace of the Prince of Thebes as it looks today. Openings on right and left lead down to the burial chambers of the "Mentemhet family." Note how covering layers have accumulated above. The finding was made near the famous Valley of the Kings near Luxor, Egypt.

MINERALOGY

Petalite Is Promising For Rocket Engines

► A MINERAL called petalite is producing new industrial ceramics able to stand up under temperatures as high as 2192 degrees Fahrenheit.

Studies of the quartz-like material, known for over a century but never utilized, have been accelerated with the advent of jet and rocket engines, John D. Clark, a Philadelphia engineer, reported.

Such engines, which must withstand towering temperatures, brought a bottleneck in materials able to shrug off a phenomenon known as "heat shock." Petalite, containing lithium, aluminum and silicates, was discovered to be even tougher than pure fused silica in its heat shock properties.

Mr. Clark predicts wide use of the long-

PALEONTOLOGY

Find Bone of Smallest Mammal in America

► THE SMALLEST mammal ever known in America has been identified from a three-sixteenth-inch piece of jawbone found in Wyoming. The animal was a tiny shrew which lived 55,000,000 years ago.

The discovery was announced by Dr. George G. Simpson of the American Museum of Natural History and Dr. Paul O. McGrew of the University of Wyoming, co-leaders of a fossil-hunting expedition this summer in the Green River Basin.

Other fossils brought back in an extensive collection include the remains of opossums no larger than today's house mouse, birds, fish and ancient animals that crept.

These creatures lived during an age when the West was also inhabited by huge mammals, and there were fresh water lakes over vast areas which are now rangeland.

Science News Letter, November 25, 1950

ARCHAEOLOGY

Evidence of Vikings Found on Shetland Islands

► THOSE tall, fair-haired Vikings, who long ago braved the Atlantic in their wooden ships, went ashore on many islands. Evidence of their arrival on the Shetland Islands north of Scotland has now been established.

Word has just been received in the United States from J. R. C. Hamilton of remarkable archaeological finds at Jarlshof.

Beneath the grassy slopes of a mound lay the debris of village settlements occupied for a period of at least 2,000 years. The earliest levels, resting on natural sand at the base of the mound, date to a time when these islanders were leading a Stone Age existence; the latest, to the period of Viking occupation beginning in the ninth and tenth centuries A.D.

The excavation of the Viking settlement, begun in 1934 by Dr. A. O. Curle, was discontinued during World War II. During this period nine houses with associated enclosure walls, passages and paved yards were uncovered. The dwellings consisted of rectangular buildings of Norse type (50 to 80 feet long), the majority being built down the landward slope of the mound with their west gables facing the sea. Smoke from the central fires escaped through a hole in the roof. There were also apertures to admit light.

During 1949-1950 the earlier levels revealed that a flourishing Viking community, probably from the More and Agder districts of Norway, was established as early as 800-850 A.D. Finds from the hearths and kitchen middens include fragments of beautifully ornamented bone combs, animal pins, spindle whorls, loom weights, iron nails, fishhooks, sickles and numerous frag-

ments of steatite or soapstone bowls.

Life appears to have been predominantly peaceful. From the quantities of fish bones and fishing tackle it is clear that they were industrious fishermen. They must also have been engaged in quarrying and transporting steatite vessels from farther up the coast. The inhabitants of Jarlshof appear to have taken little part in Viking raids during the early period, only a few objects suggesting contact with the south. In later times there was connection between the Norse colonies in Iceland and Greenland.

Science News Letter, November 25, 1950

PSYCHOLOGY

Mental Health Group Approves Comic Books

► COMIC BOOKS help children learn to read, give them a chance to keep up with the pace of our fast-moving world and are not responsible for juvenile delinquency.

If a child has nightmares after reading comic books, it is a good thing, because it will draw attention to his real anxieties and difficulties in adjustment which are merely brought to the surface by the comic book diet.

This praise of comic books comes from the National Association for Mental Health. In fact, the association is going to bring out a comic book of its own.

Science News Letter, November 25, 1950

AERONAUTICS

Landing System Antenna Unaffected by Snow

► INSTRUMENT landing systems now in use at major airports will be little affected by deep snow when equipped with new antennas developed by the Civil Aeronautics Administration.

The antennas of the instrument systems, used in foggy weather to permit planes to make safe landings, send out the electronic glide paths which properly equipped planes follow down to the runway. To produce the path in space leading down to the landing strip, the antennas make use of radio waves reflected from the ground near the station.

When snow changes the ground level, the shape of the glide path is affected. The change may be as much as a whole degree from the desired two to three degree slope. A two-foot snow will cause a change in the glide-path provided by the new antenna of only about one-tenth of a degree.

The new device is called a "null reference" antenna. The old systems can be readily modified for its use. It utilizes two glide slope antennas on the vertical pole which supports them. The instrument landing systems at all airports controlled by the CAA will soon have the new equipment.

Science News Letter, November 25, 1950

IN SCIENCE

MEDICINE

Polio Paralyzes In Cool Climates

► THE POLIOMYELITIS virus paralyzes oftener in cooler climates than in warmer ones, Dr. M. Lloyd Aycock of Harvard Medical School declared in a report to the National Foundation for Infantile Paralysis.

"The reason for this is not understood," he said. "It might well lie in some fault of bodily adaptation to the wider variations in cooler climates."

Science News Letter, November 25, 1950

MEDICINE

Medical Education Believed Inadequate

► DECLARING that current techniques of teaching medicine "have become inadequate even for the objectives of 1910," the \$63,000,000 Commonwealth Fund has announced gifts during the past year of \$693,370 for research in medical education. This was the largest share of a total disbursement of \$2,001,833.31. The announcement is made in the Fund's 32nd annual report.

"The first two years of medical teaching are characteristically split into discontinuous fragments and the student is given little help in putting them together," the report charges. "In the clinical years, too, instruction is pieced together out of the contributions of independent departments, which may differ as much in their philosophy as in their techniques."

"Only by the grace of God (which rarely becomes operative until after the young doctor has his medical degree, and not always then) does the student of medicine learn today to think about medicine as a whole," the Fund's report continues.

Largest share of the appropriation for medical education research has gone to Western Reserve University School of Medicine, Cleveland. This school received \$269,400 with an additional \$164,000 on tap, to aid it in working out and putting into effect methods of rebuilding the entire medical curriculum.

The report declares the Commonwealth Fund, founded in 1918 by Mrs. Stephen V. Harkness, intends to devote more of its money in the future to backing experiments looking to the integration of community health care and its development in new directions.

The Fund also donated \$550,845 in support of public health, \$380,002 for medical research and \$202,807 for fellowships for British students and civil servants.

Science News Letter, November 25, 1950

ENE FIELDS

MEDICINE

Most Expensive Meat Costs \$40 Per Pound

► HOUSEWIVES will shudder at this. A special part of hog brain now costs \$40 a pound.

This most expensive of any meat animal tissue is the tiny pituitary gland buried at the base of the hog's brain. From it scientists extract ACTH, potent drug which can be used like cortisone to treat arthritis and various other ailments.

Demand for ACTH has boomed the hog pituitary price to the present \$40 a pound from \$8 a pound, the cost a little over a year ago when Armour and Company started making ACTH in volume.

Armour's ACTH, marketed under the brand name of Acthar, is now available generally to physicians or to patients on physicians' prescription. It is no longer limited to patients in hospitals. And while the cost has not been reduced, patients will in a sense be paying less for treatment because doctors have found that very much smaller doses are as effective as the large ones originally used when the drug was first tried.

Science News Letter, November 25, 1950

ICHTHYOLOGY

"Death Fence" Ridding Lakes of Sea Lamprey

► SYSTEMATIC electrocution of the sea lamprey has begun in the Great Lakes.

A Fish and Wildlife Service official said the first experimental "death fence" in the government's lamprey war is now in operation across Carp Lake River at the northern tip of Michigan's lower peninsula.

An eel-like killer fish with a suction cup mouth, the sea lamprey has virtually destroyed lake trout in the Great Lakes and is now attacking other commercially valuable fish such as the whitefish and chub.

Unless stopped, Fish and Wildlife Director Albert M. Day has warned, the lamprey may destroy the entire Great Lakes fishing industry. To stop the parasite, scientists of the Cook Electrical Co. of Chicago were asked last spring to design electronic devices which could wipe out the lamprey.

The electrocution screen now in operation is the first weapon. Still in the laboratory is another device which the scientists hope will single out the lampreys from other fish by underwater sound or light rays, then kill them by electrical means.

The device now being used in Carp Lake River kills all fish passing through it. But young lamprey "neophytes" on their way from upstream mud banks to the open lakes

are virtually the only fish running the streams in the winter.

For these potential marauders, it will be a hot winter in cold country. The electrical fence gives the young lampreys no warning, killing them almost instantly when they reach it.

Before the water warms in the spring and other fish come upstream to spawn, the electrical fence will be shut off. By that time, Cook scientists are hoping to have ready another death ray which will scare away worthwhile fish while lampreys are being killed, and hold lampreys at a sort of underwater stop light while other fish move on upstream to spawn.

Science News Letter, November 25, 1950

MINERALOGY

Discover New Deposit Of Rare Mineral

► PREVIOUSLY known to exist in only two places in the world, a third deposit of the rare mineral brazilianite has been announced.

Crystals of the clear, slightly greenish mineral were found recently in old mine cuts in northeastern Brazil by Dr. Joseph Murdoch, professor of geology at the University of California at Los Angeles.

Before this discovery it was known to exist only in south central Brazil and in New Hampshire. Tiny crystals of the mineral were located in old tantalite and beryl mines in the state of Paraiba, Brazil, which had been active during World War II.

Dr. Murdoch identified the mineral on his return to the United States by its crystalline form, using the X-ray powder pattern method.

Brazilianite is more of a geological curiosity than anything else. Because of its extreme scarcity it has no economic or industrial use.

Science News Letter, November 25, 1950

MEDICINE

Head Tumors in Babies Blamed on Instruments

► INSTRUMENTS used to deliver babies are to blame for soft tissue tumors developing at the back of the head in newborn infants, Drs. M. D. Ingram, Jr., and W. M. Hamilton of Vanderbilt University School of Medicine, Nashville, charge in a report to RADIOLGY (Oct.), special medical journal published by the American College of Radiology.

These tumors consist of a blood clot underlying several layers of the scalp. Medical name for the condition is cephalohematoma. It occurs "significantly" more often in babies delivered by forceps, the Nashville physicians reported.

They found the condition developed in 126 out of 7,563 deliveries between 1944 and 1949.

Science News Letter, November 25, 1950

AGRICULTURE

Dye Seeds Yellow To Save from Birds

► DYEING forage grass and legume seeds a brilliant yellow and coating them with poison will protect them from birds, rodents and ants.

Dr. Walter E. Howard of the University of California's College of Agriculture, reports that this technique is especially useful when forage grass and legume seeds are scattered over burned brushlands to provide a quick cover to prevent costly erosion or floods.

In experiments, birds have consistently refused the yellow-dyed seeds. Rodents don't like the taste of the poison. And colonies of harvester ants were exterminated within a day or two when the seeds were treated.

The dye used is called National Brilliant Yellow S. P. The poison, compound 1080—highly toxic, with no known antidote—is available only to county agricultural commissioners and licensed pest control operators. Neither the dye nor the poison has appreciably affected growth of the seed, said Dr. Howard.

Science News Letter, November 25, 1950

MEDICINE

Anti-Clot Chemicals Are Given Locally

► A METHOD of cutting down on the danger of hemorrhage and improving results in some serious operations has been reported by physicians in the University of California School of Medicine.

They have devised a way of using anti-clotting chemicals locally, in areas near the site of operation. At the present time these chemicals, heparin and dicumarol, are given in such a way that they influence the whole blood stream. While this is very effective in preventing the formation of clots which might plug up an artery and cause death, it also raises the problem of hemorrhage.

The physicians insert a polyethylene plastic tube into the artery near the site, and introduce heparin into the artery slowly and steadily during and after the operation. Smaller quantities of the drug are needed, the blood in the danger area is kept fluid, and the danger of massive hemorrhage is reduced.

The method was worked out first on animals, and is now being used successfully on human patients. It is especially useful in operations on the extremities to remove blood clots which may threaten loss of the limb.

The work was reported by Drs. Edwin J. Wylie, Richard E. Gardner, Robert Johansen, and H. J. McCorkle, all of the California institution. (SURGERY)

Science News Letter, November 25, 1950

ASTRONOMY

Winter Arrives

With the coming of cold weather, the evening skies contain bright array of constellations surrounding Orion, the warrior. Brightest are Sirius and Procyon.

By JAMES STOKLEY

► WITH the arrival of December we approach the formal beginning of winter, which occurs this year on Dec. 22 at 5:14 a.m., EST. This is the moment of the winter solstice when the sun, which has been moving through the sky in a southerly direction since June, reaches its southernmost point. Then it starts northward again—with its promises of another spring and summer.

In the evening skies, too, the coming of winter is reflected with the appearance in the east of that bright array of constellations surrounding the figure of Orion, the warrior. These are shown on the accompanying maps, which give the appearance of the skies at about 10:00 p.m., your own kind of standard time, on Dec. 1; 9:00 p.m. at the middle of the month; and 8:00 p.m. as January arrives.

Southeastern Sky Crowded

Only a glance at the map of the southern half of the sky reveals that the left-hand side seems quite crowded compared to the region to the right. And this is no illusion, for the southeastern part of the December sky does contain an unusually large number of bright stars. In this area, for example, shown near the horizon, is the brightest of all the night-time stars: Sirius, the dog-star, in the constellation of Canis Major, the great dog. The lesser dog, Canis Minor, is higher and farther east, with the star Procyon, another of the first astronomical magnitude.

But it is above Canis Major that we find Orion, one of the most conspicuous constellations in the sky. The three stars in a row form the warrior's belt. Still higher

is Betelgeuse and another star to the right, called Bellatrix, which marks his shoulders. Rigel, on the opposite side of the belt, is in one leg, according to the pictures drawn around the stars on the old celestial maps.

Above Orion we find Taurus, the bull, with first-magnitude Aldebaran. Still higher and a little to the left stands Auriga, the charioteer, which contains the brilliant star Capella. And below Auriga are Gemini, the twins, with Castor and Pollux.

Jupiter Only Planet

Though the southwestern part of the sky is poorer in bright stars, it does supply the only planet now prominent. This is Jupiter, even brighter than Sirius. It is seen in the southwest as darkness falls at the beginning of December. Then it sets in the west around 11:00. By the end of the month it will set about 9:00 p.m.

Also visible, though much fainter, is the planet Mars. This planet sets about two and a half hours after the sun and is not shown on the maps. It is in the constellation of Capricornus, the sea-goat, which is next to Aquarius.

The planet Venus has now moved into the evening sky, though it will not be until the end of December that there will be any chance of getting a glimpse of it. Even then it sets less than an hour after the sun, and will not be easy to locate. However its great brightness, many times that of Jupiter, may enable one to pick it up near the southwestern horizon as darkness begins to fall. One should keep watching for it, however, for by the end of January it will be readily found. And during the late winter and spring it will be conspicuous in the evening sky.

Still another planet, Saturn, in the con-

stellation of Virgo, the virgin, may be seen later in the night. At the beginning of December it rises in the east in early morning, and before midnight at the close of the month.

In classifying the stars and other heavenly bodies by their brightness, astronomers make use of "magnitudes." Most of the brightest stars are of the first magnitude, though two—Sirius, the dog-star, and Canopus, which is visible only from more southerly countries than most of the United States—are even brighter and need a magnitude still lower than the first. Thus these are given negative numbers. Sirius, for example, is of magnitude minus 1.58 and Canopus of minus 0.86.

The difference between first and second, or between any two magnitudes, is in the ratio of 2.51. This seemingly curious figure was chosen because a difference of five magnitudes is a difference of brightness of exactly 100 times.

While the greatest telescopes permit recording stars as faint as the 20th magnitude, it is usually considered that the sixth is about the faintest that can be seen with the unaided eye. Of course, this is merely an approximation. A person with particularly keen eyesight, and on a night when the sky is unusually dark and clear, might be able to see down to the seventh magnitude or perhaps even fainter.

Hard To See in City

On the other hand, from a large city or its environs it is difficult to see stars of the fourth magnitude. Stars down to that faintness are shown on our maps. To show fainter ones would crowd the maps unduly and not greatly help our readers, since many of them are located where such stars could not be seen in any event.

However, on the southern chart for December we have indicated the position of an object that is considerably fainter. It is in the constellation of Gemini, the twins, close to the edge of the map. It is marked

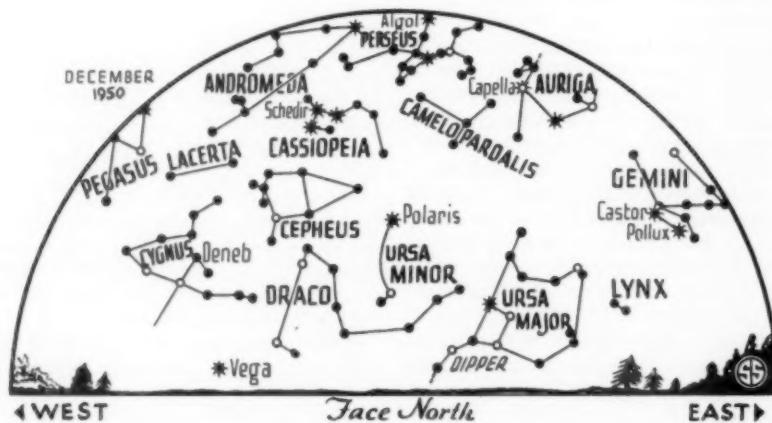
ALL THESE ABSORBING SPECIMENS
in the new RILD FOSSIL KIT

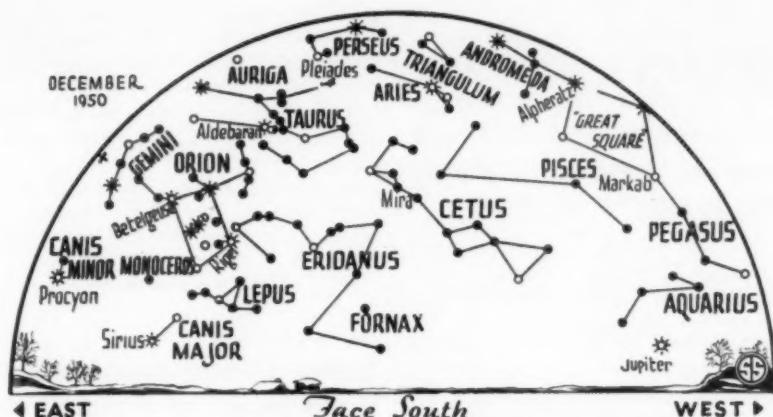
... an actual bone from the skeleton of a giant prehistoric whale, unusual Lower Miocene brachiopods and gastropods, genuine remains of the strange, extinct Ordovician graptolites, 300 million year old Paleozoic sea animals, representatives of the earliest life to appear on earth, in various sediments, other unusual fossils, also an illustrated explanatory booklet for hours of scientific fascination and experiment.

COMPLETE KIT ONLY \$1.00, returnable within 10 days if not fully pleased. FREE with each kit: a 20,000,000 year old shark's tooth, if you mail at once.

RILD SCIENCE KITS—F9
3500 Forest Park Avenue
Baltimore 16, Maryland

Splendid as gifts—ideal for use in schools.
Retailers inquiries welcome.





* * • SYMBOLS FOR STARS IN ORDER OF BRIGHTNESS

in the form of an X and shows the position of the planet Uranus, to which this earth this month makes its closest approach of the year. At that time our planet and Uranus will both be in the same direction from the sun and we will be separated by only 1,663,000,000 miles, considerably less than the 1,965,000,000 to which it can recede from us.

At that time Uranus is closest, on Dec. 29, its magnitude is 5.8. It changes little through the month, however, so that a person with average good eyesight and a clear dark sky should be able to find it. A small telescope or a good pair of binoculars will help one to pick it up. Through a large enough telescope it will be seen to have a distinct disk, unlike the stars which appear as mere points of light whatever telescopic power is used.

It was this that enabled the great English astronomer, William Herschel, to discover Uranus on March 13, 1781. Then, as now, it was in the constellation of Gemini. He realized that it was not a star but thought it to be a comet. This was hardly surprising because no astronomer before had ever discovered a new planet. Later, however, it was shown to be a planet, revolving around the sun, at an average distance of 1,785,000,000 miles every 84 of our years. Its diameter is about 32,000 miles, or just four times that of the earth, though it revolves more

rapidly than our home, turning once in less than 11 hours.

Uranus has five "moons" or satellites.

Celestial Time Table for December

Dec.	EST
2	11:22 a.m. Moon in last quarter
5	11:11 p.m. Algol (variable star in Perseus) at minimum brightness
8	8:00 p.m. Moon nearest, distance 221,700 miles; Algol at minimum
9	4:28 a.m. New moon
	3:28 p.m. Moon passes Venus
11	4:49 p.m. Algol at minimum
	8:19 p.m. Moon passes Mars
12	early a.m. Shower of meteors radiating from constellation of Gemini
14	7:43 a.m. Moon passes Jupiter
15	10:00 a.m. Mercury farthest east of sun
16	12:56 a.m. Moon in first quarter
21	9:00 p.m. Moon farthest, distance 252,400 miles
22	5:14 a.m. Sun farthest south, winter commences in northern hemisphere
24	5:23 a.m. Full moon
26	12:55 a.m. Algol at minimum
28	9:44 p.m. Algol at minimum
29	1:00 p.m. Uranus nearest, distance 1,663,000,000 miles
31	12:57 p.m. Moon passes Saturn
	6:33 p.m. Algol at minimum

Subtract one hour for CST, two hours for MST, and three for PST.

Science News Letter, November 25, 1950

VACUUM PUMP

For Chemists, Scientists, Doctors, electrical experimenters, photographers, etc. Efficient high vacuum type. 29" plus mercury vacuum. Anti-splash head. Readily taken apart without tools for cleaning. Screws on standard water faucet. Vacuum nipple has 1/4" hose connection. Made to last from Zamak and Brass. Dlr's inquiries solicited. Satisfaction Guaranteed. \$1.98 POSTPAID. NO COD'S PLEASE.

NATIONAL LABORATORIES

11800 S. E. Linwood Ave., Portland 22, Ore.

Cargille

CHECK LIST

of

Laboratory Aids

for

Industrial, Educational & Medical Laboratories

Second Edition Released November, 1950

Write for your copy . . .

Just ask for Leaflet CK-2-SNL

R. P. Cargille

118 Liberty St. New York 6, N. Y.

40 POWER PENCIL SIZE POCKET MICROSCOPE

40X Pocket Microscope, aluminum body with pocket clip, 4 precision lenses which give a clear, crisp image-to the edge. A handy instrument for examining minerals, gems, micro mounts, polished surfaces, gears, engravings, insects, record cutting, phonograph needles and for all other inspections and examinations. Instant, easy contact focus. No special lighting required. You will be proud to own one. Order today, \$3.50 each postpaid.

"RAINBOW IN SUNLIGHT" SPECTRUM PRISM

45-90-45 degree, crystal clear white glass for spectrum demonstration. Creates a beautifully georgeous and brilliant rainbow effect in sunlight. Suitable for chemical analysis with the bunsen flame. Instructive. Very large size 6 1/2" x 2", can be used in any type of optical system-telescopes, photography, etc., beautifully polished, no "silvering." Surplus; cost U. S. Govt. 10 times what we ask. Price each \$2.00, plus 50c postage.

LIQUID LIGHT

Kit of carefully measured ingredients for ten demonstrations of the production of liquid light. A cold greenish-blue light, bright enough to read by. The chemicals are not poisonous, have no unpleasant odors, are not inflammable and are positively non-explosive; may be readily washed off hands and all washable fabrics and will not stain or injure. A wonderful chemical demonstration, postpaid. Price \$1.00.

ALNICO TRICKSTERS

Super-powerful permanent bar magnets with a large variety of astonishing gravity defying tricks can be performed. Demonstrates the principles of magnetic polarity as no other magnetic material can. Two bars including trick sheet. 50c plus 10c postage.

ALNICO GREY-GIANT HORSESHOE MAGNETS

Phenomenal. Lifts many times its own weight, with many uses in home, shop, boat and industry. 8 oz. with keeper. P. P. \$1.50

STEAM ENGINE

Minature engine, ready for steam. Strongly made of bronze, brass and iron. A practical working model, made to exact scale. Specifications: Bore 9/16"; stroke 1 1/16"; length of base 6"; height 3"; weight 2 pounds. Finished in red enamel with brass trim. Delivers high H.P. with 15 lb. pressure. Other suggested uses: students, experimenters, display, aerating pump in tropical fish tank, etc. Postpaid. Price \$17.50.

AMBER LUNAR FILTER

Excellent for viewing the full moon. Improves seeing by a point or two and greatly reduces glare. Enables you to see a wealth of rather curious detail of small light and darkish areas under high solar illumination. Postpaid unmounted \$1.00 ea.

DIRECTIONAL COMPASS

Famous U. S. Gauge make pocket compass made of durable metal, accurate, easy to read, 2" diameter with unbreakable crystal. Excellent for campers, magnetic experimenters, etc. Postpaid 75c.

BRILLIANT FLUORESCENCE

With Powerful U.V. Lamp

Still the most convenient, the best for all around results. Used directly on 120V A.C. or D.C. 250 big watts—3200 to 4100 Angstrom. Gives brilliant fluorescence on most of the common fluorescent minerals. Best lamp available for chemical and lithographic fluorescence. The only powerful U.V. lamp at this price. Bulb, only \$1.25. Sent via Express, charges collect (insured) only. Reflector and Cord extra, \$2.50.

GEM CARBIDE SCRIBER

This GEM CARBIDE SCRIBER can't be beat! Tipped with the hardest metal made by man. Moh's scale 9.5. Stays sharp 50 times longer than any other metal. With this pencil size GEM CARBIDE SCRIBER, you can do your engraving on hardened steels, metals, glass, gems, ceramics, plastics, etc. USED BY: jewelers, artists, craftsmen, designers, die cutters, glass cutters, machine shops, laboratories and radio builders. Price \$1.00.

MINERALS

Learn to identify minerals. Know their relative hardness by use of the Moh's Scale of Hardness. A special combination offer of 9 minerals, and a mineral handbook describing minerals with notes on how to collect and study them. Postpaid 75c.

POLAROID

Experiment with polarized light. Get two pieces of genuine polaroid that can be used in photography, petrology, physics, chemistry, astronomy, etc. Mounted in optical glass 3" diameter (72 mm) \$1.25 each. 2 for \$2.00. Postpaid.

No open accounts—Remit with order

Send 50c for Up-to-Minute Catalog

HARRY ROSS

MICROSCOPES TELESCOPES

Scientific and Laboratory Apparatus

70 West Broadway, Dept. NL

New York 7, N. Y.

GEOGRAPHY

Ice Islands as Bases

Floating masses of ice 20 miles across and 200 feet thick would be suitable for Arctic weather stations, air fields and research laboratories, conference is told.

► **HUGE** floating islands of ice in the Arctic Ocean are being eyed by scientists as potential bases for weather stations, air fields and research laboratories near the North Pole.

Weather experts and military research specialists at the Alaskan Science Conference in Washington listened intently as monster ice islands 20 miles across and 200 feet thick were described by Lt. Col. Joseph O. Fletcher, commanding officer of the Air Force's 375th Reconnaissance Squadron based in Alaska.

Col. Fletcher showed a photograph of a four-engined Russian plane which landed on Arctic ice 13 years ago. The inference was clear: Russia began long before the United States to study conditions along the short air route over the Polar cap.

The islands floating in the Arctic Ocean are much thicker than ordinary field ice. Scientists at the conference said they are probably chunks of glaciers millions of years old—so called fossil ice which has

never melted. There are believed to be many of them moving sluggishly through the thinner ice and open waters of the Arctic, perhaps as much as two miles a day.

No research stations now exist on these floating ice islands, Dr. A. F. Spilhaus, dean of the Institute of Technology at the University of Minnesota, said, but scientists are intrigued by their possibilities.

The polar regions are the only great gaps remaining in the world's weather network, he said. Little is known of temperature and wind conditions at sea level in the Arctic, although many airplanes have now flown over the region. Geophysicists want to know more about the atmosphere, radio conditions and the earth's magnetism at the top of the world.

The islands might be very useful for landing strips, Dr. Spilhaus said. Low level reconnaissance has shown there are level areas on the islands of ice suitable for landings.

Polar engineering is a new and startling field, he said. Solid ice may be used as a construction material like steel or wood. Alloys of ice mixed with sawdust are being studied.

From materials such as this, the meteorologist predicted, whole towns may some day be built in the Arctic on floating bases which nature has already provided in a frozen world.

Science News Letter, November 25, 1950

GEOPHYSICS

Consider Possibility of Second Magnetic Pole

► **THE** possibility that there may be a second magnetic north pole somewhere in the Arctic is being taken seriously by scientists.

It was brought up again in a paper by two geophysicists of the U. S. Coast and Geodetic Survey, David G. Knapp and Capt. Elliott B. Roberts. The paper was presented to the Alaskan Science Conference sponsored by the National Academy of Sciences and the National Research Council.

Alaska occupies a strategic area in the attack on this "perennial riddle of Arctic magnetism," the scientists reported. From Alaska, they said, magnetic observations in the heart of the Arctic Ocean may break the mystery.

The question lies in the magnetic north pole found by James C. Ross on the Boothia Peninsula in 1831. This imaginary

point on the earth's surface has moved somewhat since it was found, but it is still not in the center of the overall magnetic field of the Arctic.

The possibility that a second magnetic pole may be pulling the field askew has been suggested before by scientists. Despite tremendous difficulties in taking magnetic observations in the Arctic Ocean, the job of tracking down the answer is being accelerated.

Science News Letter, November 25, 1950

RADIO-ASTRONOMY

Better Communications From Study of Aurora

► **BETTER** communications in the Arctic, vital if all-out war comes, should result from studies of the aurora borealis and the upper atmosphere now being made in Alaska.

Dr. A. G. McNish of the National Bureau of Standards told the first Alaskan Science Conference, sponsored by the National Academy of Sciences, that the effect of the "northern lights" on radio communications was "not altogether deleterious." Normally brilliant aurora displays mean interference with radio reception, and often blackouts. New information is giving a possibility for careful choice of frequency that will allow radio communications otherwise impossible.

Science News Letter, November 25, 1950

GEM SPECIMEN COLLECTION

Nine fine rough specimens of Crystal Gems in Snowfoam Plastic Mount 3 x 5 x 1/2" containing Aquamarine, Golden Beryl, Pink Tourmaline, Green Tourmaline, Green Beryl, Kyanite, Peridot, Citrine and Amethyst. Price \$2.50 prepaid. Booklet, Introduction to Geology for the Layman 50¢.

Write for free catalogue

ECKERT Mineral Research
Naturegraph Co.

Dept. SNL
110 E. Main St.
Florence, Colorado

NEW! **ANTI-STATIC** COMPOUNDS REMOVE STATIC ELECTRICITY NEW!

#79: Changes electrical charges on smooth surfaces; wiped, brushed or sprayed on. Recommended for use on METALS and PLASTICS, electronic business recorders, X-Ray equipment. Removes dust and lint attracting static on PLASTIC RECORDS—assures noise-free playing.

#79-OL: Removes electrical charges on FABRICS, textiles and plastic yarns. Wiped or sprayed onto auto seat covers, carpets, garments. In operating rooms, spraying of floors, etc., prevents static-caused sparks and inflammation of ether vapors.

ORDER Either Product. **\$4.50, ppd.**

TODAY Sample Quart . . . **\$4.50, ppd.**
No COD's. Please remit w. order:
MERIX CHEMICAL COMPANY, Dpt. SN4
1021 E. 35th St., CHICAGO, 15, ILL.

QUAKERS IN SCIENCE and INDUSTRY

By Arthur Raistrick, M.Sc.

An account of the Quakers, who, during the period in which they appeared to be drifting into a quiet retirement from the stress of the fight for religious freedom, were, actually, giving to their time and generation a very considerable intellectual and technical contribution, the benefits of which are still accruing to us . . . In the sphere of Technology and Finance, the Quakers prepared some of the way for the Industrial Revolution. Their powerful position and influence in the wool trade, iron manufacturing, lead mining, botany, medicine and banking is skillfully brought out.

Illustrated \$6.00

PHILOSOPHICAL LIBRARY

Publishers

15 E. 40th St., Desk 35,

New York 16, N. Y.

Expedite Shipment by Prepayment



WHOLE FAMILIES WILL ENJOY *Science News Letter*, as well as individuals, middle-aged, old and young, just so they have that eternal spark of wanting to know more about the world they live in. *Science News Letter*, coming once a week throughout the year, provides the latest news of science clearly, competently, compactly, in brief, intelligible articles on the present and future of science.

Pick out the families, the friends and the relatives on your Christmas list with special mental curiosity.

Put their names and addresses on the coupon below, detach and mail to us.

We will send to each person you list, the weekly issues of *Science News Letter* for all of 1951. We will send the Christmas and New Year's issues as well, without extra charge, making 54 weekly presents from you to each lucky recipient. And we will send to each, a Christmas card announcing your gift, with *your name* on it as donor.

Send us now or later (if you prefer) \$5.50 for the first 1-year subscription you list, and \$4.50 for each additional subscription (one of which may be your own renewal).



Please fill in—detach—and mail

To *Science News Letter*
1719 N Street, N. W., Washington 6, D. C.

Please send **SCIENCE NEWS LETTER**
for one year **(**\$5.50 for the first 1-year Gift Sub-
scription. Additional subscriptions,
one of which may be an extension of
your own subscription, \$4.50 each.**)**

GIFT
TO

Street _____
City &
State _____

With gift subscription
Announcement Card
to read "FROM" _____

and GIFT
TO

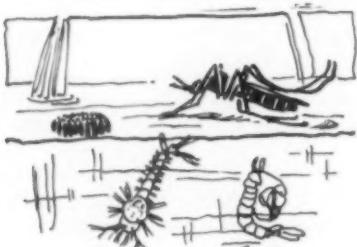
Street _____
City &
State _____

With gift subscription
Announcement Card
to read "FROM" _____

**and check here if you wish us also to extend your
own subscription as part of this Christmas order**

Signed _____
Street _____
City &
State _____

GIVE A NEW MENTAL OUTLOOK FOR CHRISTMAS;
GIVE INTELLECTUAL STIMULATION, SCIENTIFIC
DISCOVERY, THE NEWEST KNOWLEDGE OF SCIEN-
TISTS IN ALL SCIENCES . . .
GIVE SCIENCE NEWS LETTER.

**Bloodthirsty Lady**

► FAR AHEAD of the bears and the possums, an unpopular member of the great outdoors goes into hibernation at the first signs of frost.

The trouble is, they have not gone far enough. The ladies of the race, deadlier than the males by virtue of their inordinate thirst for warm, red blood, have simply taken a long last drink and gone off to a protected corner, a rotted tree trunk or a crevice in the rocks. The blood is converted to a reserve of fat and mother mosquito settles down to a winterlong coma.

Her two-legged enemy will not be idle during the winter, however. In the great spruce and fir forests of the Pacific Northwest, where the summertime mosquito population per cubic foot of air is sometimes brutal, scientists will be experimenting this year in an odd way. Before the winter snows begin to fall, and although there is not an active mosquito within hundreds of miles, men will be out spraying with DDT.

As the snows melt in spring and mosquito larvae wiggle into life in the dripping thaws, the water will hold a nasty surprise. The DDT dissolved in the melting snow, the scientists hope, will kill far more mosquitoes than the same amount

sprayed on the forests later in the year.

Dr. Marston Bates, writing in the magazine *NATURAL HISTORY*, tells of one mosquito variety in Africa and Malaya—there are about 2000 known kinds over the world—which has taken to bothering ants rather than humans. These bandits station themselves directly in front of hard-working ants

and glower until the ant stops and opens its jaws. Whereupon the mosquito reaches into the ant's mouth and drains off any honey it finds there.

Not that any harm should be wished upon the ants, but this is a career more mosquitoes should pursue.

Science News Letter, November 25, 1950

Books of the Week

TO SERVE YOU: To get books, send us a check or money order to cover retail price. Address Book Dept., SCIENCE NEWS LETTER, 1719 N St., N. W., Washington 6, D. C. Ask for free publication direct from issuing organizations.

ARTIFICIAL DRYING OF FORAGE CROPS—E. D. Gordon and W. M. Hurst—Gov't. Printing Office, U. S. Dept. of Ag. Circ. No. 443, 28 p., illus., paper, 10 cents.

BILLY BUYS A DOG—Elizabeth Laing Stewart—Reilly & Lee, 44 p., illus., \$2.00. A clever way for a 1st or 2nd grader to learn the different types of dogs. Many full page illustrations.

THE BIOLOGY OF HUMAN STARVATION—Vol. I & II—Ancel Keys and others—University of Minnesota Press; Vol. I: 763 p.; Vol. II: 621 p.; illus.; \$24.00 set. The history and present problems of undernutrition throughout the world.

CINCHONA PROPAGATION—Harold F. Winters—Gov't. Printing Office, U. S. Dept. of Ag. Bull. No. 47, 26 p., illus., paper, 15 cents. A report on propagation methods, the history of Cinchona, and diseases affecting Cinchona, the natural source of quinine.

COPEPODS GATHERED BY THE UNITED STATES FISHERIES STEAMER "ALBATROSS" FROM 1887 TO 1909, CHIEFLY IN THE PACIFIC OCEAN: Contributions to the Biology of the Philippine Archipelago and Adjacent Regions—Charles Branch Wilson—Gov't. Printing Office, U. S. Nat'l. Museum Bull. 100, 300 p., illus., paper, \$1.00.

DECIDUOUS FORESTS OF EASTERN NORTH AMERICA—E. Lucy Braun—Blakiston, 596 p., illus., \$10.00. Primarily a reference book or a text for advanced students.

DICTIONARY OF FOREIGN TRADE—Frank Henius—Prentice-Hall, 2nd ed., 957 p. illus., \$10.00. Definitions of foreign trade terms, usages, practices, procedures, and abbreviations, alphabetically arranged.

DISCUSSION ON THE PRESENT STATUS OF RADIATION GENETICS—Oak Ridge National Laboratory, 210 p., illus., paper, free upon request to publisher, P. O. Box P, Oak Ridge, Tenn. Among the topics discussed are the effects of radiation on mitosis, fungi, *Paramecium aurelia* and chromosome structure. These papers were given at the information meeting for Biology and Medicine of the Atomic Energy Commission, March 26-27, 1948. Reprinted from the *Journal of Cellular and Comparative Physiology*.

ECONOMIC ASPECTS OF ATOMIC POWER—Sam H. Schurr and Jacob Marschak and others—Princeton University Press, 289 p., illus., \$6.00. An exploratory study.

EFFECTIVE TEACHING: A Manual for Engineering Instructors—Fred C. Morris—McGraw-Hill, 86 p., illus., paper, 60 cents.

ELECTRICITY ON FARMS IN THE EASTERN LIVESTOCK AREA OF IOWA: A Progress Report—Joe F. Davis and Paul E. Strickler—Gov't. Printing Office, U. S. Dept. of Ag. Circ. No. 852, 88 p., illus., paper, 25 cents.

EVERYDAY MACHINES AND HOW THEY WORK—Herman Schneider—Whittlesey, 192 p., illus., \$2.50. Explains how many household machines and devices work. Drawings are by Jeanne Bendick.

THE EXCEPTIONAL CHILD IN INFANCY AND EARLY CHILDHOOD: Proceedings of the Annual Spring Conference on Education and the Exceptional Child Under the Auspices of the Child Research Clinic of the Woods Schools at Langhorne, Pa., May, 1950—The Woods Schools, 48 p., paper, free upon request to publisher, Langhorne, Pa.

FIRST CHEMISTRY BOOK FOR BOYS AND GIRLS—Alfred Morgan—Scribner, 179 p., illus., \$2.75.

TWO PERFECT CHRISTMAS GIFTS!

Just Published!
THE CAVE BOOK
By Charles E. Hendrix
Special Publication No. 1
of the Earth Science
Institute

This new book is a "must" for any one interested in what goes on beneath the surface of the earth. A popular account of caving, it includes discussions on the hobby of spelunking, the origin of caves and theories of cave formation, dripstones (stalactites, etc.), cave surveying and mapping, exploring equipment, and commercial caves.

1950 68 Pages.
34 Illustrations \$1.00

THE EARTH SCIENCE PUBLISHING CO., Box 28-W, REVERE, MASSACHUSETTS

Subscribe NOW to
THE EARTH SCIENCE
DIGEST

An international magazine, issued monthly, devoted to the geological sciences. Illustrated articles and features of lasting interest to the amateur and professional geologist, mineralogist, paleontologist, and naturalist.

Jerome M. Eisenberg,
STS '47, Editor

Subscription \$3.00 a
Year, 2 Years—\$5.00
Single copy—25¢

Special group subscription rates: 10 or more subscriptions \$2.00 each per year.



STUMP THE FAMILY GENIUS



\$1.00
postpaid.

With the "Tower of Hanoi". One of the great puzzles of all time.

Not a trick . . . but a true puzzle. Molded in bright blue and yellow plastic. Great fun for whole family, visitors and shut-ins too.

Send for your "Tower" now.

SATISFACTION GUARANTEED

THE THINKER PUZZLE CO.
P. O. BOX 82 GREENSBORO, N.C.

opens its
honey

wished
er more

25, 1950

ess Book
on direct

RADIAL
al Labo-
a request
e, Tenn.
effects of
ameum
. These
meeting
omic En-
48. Re-
nd Com-

Sam H.
others—
., \$6.00.

ngineer-
McGraw-

N LIVE-
Report—
Gov't.
Circ. No.

WORK—
., illus.,
old ma-
are by

CY AND
Annual
the Ex-
of the
Schools
Woods
quest to

GIRLS—
., \$2.75.

5

e
d
e
.

Contains many useful experiments which a boy or girl can perform in the home.

GENES, PLANTS AND PEOPLE: Essays on Genetics—C. D. Darlington and K. Mather—*Blakiston*, 187 p., illus., \$4.00. Several of these essays deal with the points of difference between the genetic theory based on traditional scientific method and that propounded by the latest Soviet school represented by T. D. Ly-senko. Of British origin.

HOLDING POWER AND SIZE OF HIGH SCHOOLS—Walter H. Gaumnitz and Ellsworth Tompkins—*Gov't. Printing Office*, Federal Security Agency Circ. No. 322, 25 p., illus., paper, 20 cents. A brief study.

IDENTIFICATION OF BRASSICAS BY SEEDLING GROWTH OR LATER VEGETATIVE STAGES—Albina F. Musil—*Gov't. Printing Office*, U. S. Dept. of Ag. Circ. 857, 26 p., illus., paper, 15 cents.

INDUSTRIAL AND SAFETY PROBLEMS OF NUCLEAR TECHNOLOGY—Morris H. Shamos and Sidney G. Roth, Eds.—*Harper*, 368 p., illus., \$4.00. For the well-informed layman. Lectures presented at the New York University forum, Jan. 10-12, 1950, on the non-military uses of atomic energy.

LIVE: Vol. I, No. 1—Cameron Day and Myron Emanuel, Eds.—*National Safe Drivers Association*, 95 p., paper, \$1.00 per year. A quarterly devoted to providing information for careful driving.

MEDICAL EDUCATION IN THE UNITED STATES AND CANADA, 1949-50—*American Medical Association*, 73 p., illus., paper, 50 cents. Reprinted from the Educational Number of the *Journal of the American Medical Association*.

NEW ATOMS: Progress and Some Memories—Otto Hahn—*Elsevier*, 183 p., illus., \$1.75. A collection of the author's papers edited by Dr. W. Gaade. Dr. Hahn was winner of the 1944 Nobel Prize in Chemistry and discoverer of the fission of uranium.

THE OCCURRENCE OF BARIUM IN SOILS AND PLANTS—W. O. Robinson, R. R. Whetstone and Glen Edgington—*Gov't. Printing Office*, U. S. Dept. of Ag. Tech. Bul. No. 1013, 36 p., illus., paper, 15 cents.

PERSPECTIVES ON A TROUBLED DECADE: Science, Philosophy, and Religion, 1939-1949—Lyman Bryson, Louis Finkelstein and R. M. MacIver Eds.—*Conference on Science, Philosophy and Religion in Their Relation to the Democratic Way of Life, Inc.* (Distributed by Harper), 901 p., \$5.50. Papers presented before the Tenth meeting of the Conference, Sept. 6-9, 1949.

PHYSICS OF THE SUN AND STARS—W. H. McCrea—*Hutchinson's University Library* (U. S. Distributor: Longmans, Green), 192 p., illus., \$2.00. A survey of the main features of the physical state of the universe.

PRINCIPLES OF GENERAL PSYCHOPATHOLOGY: An Interpretation of the Theoretical Foundations of Psychopathological Concepts—Siegfried Fischer—*Philosophical Library*, 327 p., illus., \$4.75.

PROBLEMS IN ENGINEERING DRAWING—J. N. Arnold—*Prentice-Hall*, 3rd ed., 76 p., illus., paper, \$4.35. Lettering exercises, working drawing, assembly drawing and pictorial drawing are included.

REMAINS OF LAND MAMMALS FROM THE MIocene OF THE CHESAPEAKE BAY REGION—C. Lewis Gazin and R. Lee Collins—*Smithsonian Institution*, Publ. 4019, 21 p., illus., paper, 25 cents.

SOURCE MATERIALS ON KOREAN POLITICS AND IDEOLOGIES—Donald G. Tewksbury, Compiler—*Institute of Pacific Relations*, Vol. II of the series of Source Books on Far Eastern Political Ideologies, 190 p., paper, \$2.50.

TURRIALBA: Revista Interamericana de Ciencias Agricolas Vol. I, No. 1—Armando Samper,

Ed.—*Inter-American Institute of Agricultural Sciences*, 63 p., illus., paper, \$2.00 per year. An inter-American quarterly presenting manuscripts on agricultural sciences and rural life. Some contributions are in Spanish and some in English.

Science News Letter, November 25, 1950

Timely

Interesting

EST. 1919
MSSC PRODUCTS

Scientific Christmas Gifts

1. BIO-SET



Microscope Slide-Making Outfit

Instructive and fascinating. Contains all accessories and simple manual for preparing microscope specimens, including 200-power microscope shown on right.

(postpaid) \$17.50

2. MICROSCOPE

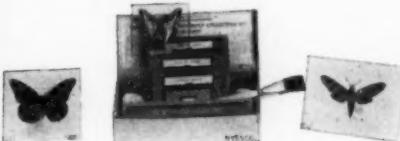


(200-power)

A new instrument at a low price, with hand-cut and hand-polished lenses, sturdy metal stand with inclination joint, sharp image from edge to edge. With sample slide. (postpaid)

\$12.50

3. TRANSPAR KIT



For Home, School, Camp

New method of mounting butterflies and moths in plastic. Beautiful, durable preparations. Outfit includes ball-bearing clamp, 20 plastic mounts, brushes, chemicals, and simple directions.

(postpaid) \$12.00

4. MAGNIFIER



Folding, Doublet (10X)

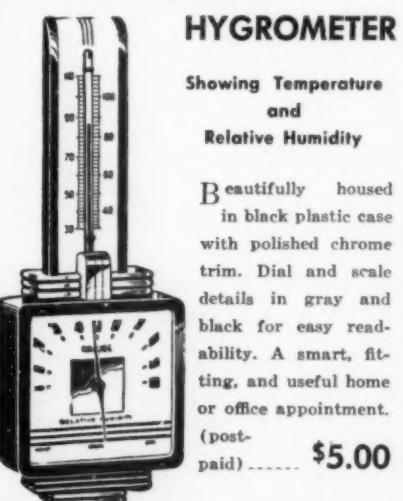
A quality instrument at exceedingly low cost. Double convex lenses, in aluminum housing, giving undistorted maximum field, very light in weight (postpaid)

\$4.00

5. THERMOMETER

HYGROMETER

Showing Temperature and Relative Humidity



Beautifully housed in black plastic case with polished chrome trim. Dial and scale details in gray and black for easy readability. A smart, fitting, and useful home or office appointment.

(postpaid) \$5.00

6. BODYSCOPE

Know Your Body and Conserve Health

Panorama of human structure, 20" x 32", with 80 colored plates, 20,000 words of description. New plate with description comes into view at the turn of a dial. Excellent gift for home, school, hospital and doctor's office.

(postpaid) \$15.00

Order early to avoid rush!

ORDER FORM

N. Y. SCIENTIFIC SUPPLY CO.
28 W. 30th St., New York 1, N. Y.

Enclosed please find \$_____, for which please send me (postpaid) the following encircled number(s):

1 2 3 4 5 6

Name _____

Address _____

City _____ Zone _____ State _____

